REMARKS

The Office Action dated 27 November 2001 has been fully considered. Claims 1-8, and 10-11 have been amended. Claim 9 is canceled without prejudice to the subject matter thereof. No new matter has been added. Claims 1-8, and 10-11 are pending in the application. Reconsideration of the claims is respectfully requested.

In paragraphs 1-3 on page 2 of the Office Action, FIGs. 1, 2, 7, and 8 are objected to for failing to comply with MPEP §608.02(g) and 37 CFR §1.84(p)(5), respectively.

Applicants respectfully traverse the objections, but in the interest of expediting prosecution have submitted a Proposed Drawing Change for Examiner's approval under separate cover to overcome the objections.

In paragraph 4 on page 2 of the Office Action, claims 3-11 are rejected under 35 U.S.C. § 112 second paragraph for being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Applicants respectfully traverse the rejection, but have amended the application to overcome the rejections. It is believed that all claims comply with 35 U.S.C. § 112.

In paragraph 5 on page 3 of the Office Action, claims 1 and 2 are rejected under 35 U.S.C. §102 (b) as being anticipated by U.S. Patent 5,396,516 issued to Padovani et al (hereinafter Padovani).

The Applicants respectfully traverse the rejection for the following reasons.

Applicants' claim 1 sets forth, among other steps, a method of controlling the transmission power used in a digital radio link in a system where a base station (e.g. BTS) and a personal station (e.g. PS) are parties to the radio connection and during operation between them either party may send a power control command, which will change the transmission power of the other party. The method comprises when a transmission rate of the first party changes, the first party informs the second party of the new transmission rate. The method further comprises that in response to the new transmission rate the second party changes the power control command to be sent to the first party to be in accordance with the new transmission rate, the first party changes the reception of its own power control command to be in accordance with the new transmission rate.

In other words, Applicants' claimed invention sets forth a method, which adapts the transmission rate of the power control command depending upon the transmission rate of the data channel. In FIG. 3 of the instant application, for example, a situation is exemplified, in which the PS has a very low transmission rate in the reverse direction, i.e. towards the BTS. Such a situation exists, for example, when the PS maintains an internet connection through the BTS with the Internet, where the Internet supplies most of the information transfer. In such a case, transmission power adjustments of the PS are required at a much lower rate than power adjustments required by the BTS, since the BTS is transmitting the majority of the information to the PS, whereas the PS merely transmits periodic acknowledgments. See page 7 lines 3-20.

As can be seen from FIG. 3, the transmission rate of power control commands from the BTS to the PS is at a lower transmission rate than the transmission rate of

power control commands from the PS to the BTS, due to the difference in data transmission rates in the forward and reverse channels. Hence, a novelty of the claimed invention is realized in that a method for power control is set forth, which adapts to the data transfer situation and increases radio link capacity by diminishing radio link resources required by the power control mechanism as set forth on page 5, lines 6-9 of the instant application.

Padovani, on the other hand, merely teaches that comparator 120 compares the received power level signal and the power level setpoint signal and provides a deviation signal representative of the deviation of the received power from the power level setpoint set by processor 118. Power up/down command generator 122 receives the deviation signal and generates either a power up command or a power down command, which the base station transmits to the mobile station. (See Col. 6, line 67 to Col. 7, line 7).

Padovani fails to teach or fairly suggest the method used to transmit the power up and power down commands. Padovani especially fails to show a correlation between the transmission rate of the power control commands and the transmission rate used by the data channel, which is in contrast to Applicants' claimed invention.

To anticipate claim 1, Padovani must teach every element of the claim. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the claim. All claim elements, and their limitations, must be found in the prior art reference to maintain a rejection based on 35 U.S.C. §102. Applicants respectfully submit that Padovani fails

to teach, among other features, the claimed limitation of adjusting the transmission rate of the power control commands in conjunction with a new transmission rate established between first and second parties. Applicants further submit, therefore, that claim 1 patentably distinguishes over Padovani and is in condition for allowance.

In paragraph 6 on page 4 of the Office Action, claims 6 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Padovani in view of Love et al.

The Applicants respectfully traverse the rejection for the following reasons.

Love, similarly to Padovani, fails to teach a dynamic selection of the transmission rate of the power control command that is dependent upon data transmission rates. Furthermore, Love teaches the prior art method of power control in which power control bits puncture existing symbols every 1.25 ms on the forward link of each BTS. (Col. 8 line 65 to Col. 9 line 2). In other words, Love teaches a fixed rate of power control command transmission, which is in contrast to Applicants' claimed invention. Love in combination with Padovani fails to teach or fairly suggest the limitations as set forth in Applicants' claim 1 and, therefore, also fails to teach the limitations of dependent claim 6, since claim 6 depends from claim 1. Claim 6, therefore, patentably distinguishes over Padovani in view of Love and is in condition for allowance. The rejection of claim 9 is considered moot in view of the cancellation of claim 9.

In paragraph 7 on page 5 of the Office Action, claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Padovani in view of Ghosh et al.

The Applicants respectfully traverse the rejection for the following reasons.

Ghosh, similarly to Padovani and Love, fails to teach a dynamic selection of the transmission rate of the power control command that is dependent upon data

transmission rates. Furthermore, Ghosh teaches the prior art method of power control in which power control bits POWER CONTROL are multiplexed with a mixed signal at MUX 39. (Col. 2. lines 60-61). The fixed transmission rate of the power control groups of Ghosh is further illustrated in FIG. 6 in conjunction with Col. 3, lines 48-64, in which the transmission rate of the power control groups is kept constant by using redundant transmission of data. Ghosh in combination with Padovani fails to teach or fairly suggest the limitations as set forth in Applicants' claim 1 and, therefore, also fails to teach the limitations of dependent claim 5, since claim 5 depends from claim 1. Claim 5, therefore, patentably distinguishes over Padovani in view of Love and is in condition for allowance.

CONCLUSION

In view of the amendments and reasons provided above, it is believed that all pending claims are in condition for allowance. The amendments clarify the patentable invention without adding new subject matter. Applicant respectfully requests favorable reconsideration and early allowance of all pending claims.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Agent for Applicants, Michael T. Wallace, at 952-253-4127.

Respectfully submitted,

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Appendix A
Marked Up Version of the Entire Claim Set

1. (Once Amended) A [Method] method of controlling the transmission power used in a digital radio link in a system where a base station and a personal station are parties to the radio connection and during operation between them either party may send a power control command, which will change the transmission power of the other party,

[characterized in that] the method comprising:

when [the] a transmission rate of the first party changes, the first party [it will inform] informs the second party of the new transmission rate; and [,]

in response to the [message] new transmission rate the second party changes the power control command to be sent to the first party to be in accordance with the new transmission rate, the first party changes the reception of its own power control command to be in accordance with the new transmission rate.

2. (Once Amended) [Method] The method as defined in claim 1, [c h a r a c t e r i z e d in that] wherein when the [transfer] transmission rate of the second party changes:

the first party will change the power control command to be sent to the second party [,]; and

the second party will change the reception of its own power control command.

3. (Once Amended) [Method] The method as defined in claim 1, [c h a r a c t e r i z e d in that] wherein [the power control command is formed of power control commands and] when the transmission rate of the first party [becomes slower] decreases the second party will [lower] decrease the frequency of power control commands to be sent to the first party and, correspondingly, when the transmission rate [becomes higher] increases, the second party will increase the frequency of power control commands.

4. (Once Amended) [Method] The method as defined in claim 1, [c h a r a c t e r i z e d in that] wherein the power control command is formed of [power control commands of several] a plurality of bits and when the transmission rate of the first party is [lowered]decreased, the second party will shorten the length of the power control command and, correspondingly, when the transmission rate [becomes higher] is increased the second party will extend the length of the power control command.

5. (Once Amended) [Method] The method as defined in claim 1, [c h a r a c t e r i z e d in that] wherein [the power control command is formed of power control commands and] when the transmission rate of the first party is [lowered] decreased, the second party will lower the energy of power control commands to be sent to the first party and, correspondingly, when the transmission rate of the first party [becomes higher] is increased, the second party will increase the energy of power control commands.

6. (Once Amended) [Method] The method as defined in claim 1, [c h a r a c t e r i z e d in that] wherein the change in transmission rate of the first party is declared in a field of [the] a transmission frame reserved for this purpose.

7. (Once Amended) [Method] The method as defined in claim 1, [c h a r a c t e r i z e d in that] wherein [in such a system where there is an individual transmission frame for each transfer rate, a] the change in transmission rate of the first party is declared by changing [the] a structure of [the] a transmission frame directly to correspond with the new transfer rate.

8. (Twice Amended) [Method] The method as defined in claim 1, [c h a r a c t e r i z e d in that] wherein the power control command [has a quick state and a slow state] transmits at first and second transfer rates, the second transfer rate being lower than the first transfer rate, of which the [slow state] second transfer rate is used when the transmission of the commanded party is in a DTX state.

10. (Twice Amended) [Method] The method as defined in claim 1, [c h a r a c t e r i z e d in that] wherein when the power control command changes, [the] a size of the transmitter's power control step is also changed.

11. (Twice Amended) [Method] The method as defined in claim 1, [c h a r a c t e r i z e d in that] wherein the power control command in one direction is changed in reverse proportion to [the] a load of the opposite transfer direction.